From: Kemper, Tim [tim.kemper@aptim.com]
Sent: Wednesday, April 29, 2020 7:21 PM
To: Larson, Leo M CTR (USA) [leo.m.larson.ctr@navy.mil]; Stoick, Paul T CIV USN (USA) [paul.stoick@navy.mil]
CC: Lightner, Michael [michael.lightner@aptim.com]; Hoch, Kevin [Kevin.Hoch@aptim.com]; Ayala, Mike [Mike.Ayala@aptim.com]; Click, James [james.click@aptim.com]
Subject: [Non-DoD Source] FW: D0006 CTO 4761 - Submittal-007 - Slurry Wall Implementation Plan
Attachments: Transmittal 007 SW Implementation Plan_signed.pdf; SW Installation from F RAWP PEP3_COMPLETE.pdf

Hello Leo -
APTIM respectfully submits Transmittal #007 – the Slurry Wall Implementation Plan for Parcel E (Phase 3) for Navy review and concurrence. APTIM has reviewed and approved the attached information. The SW Implementation Plan was prepared by APTIM in coordination with our slurry wall subcontractor Geo-Solutions Inc. (GSI) per DBR project specifications (Section 02 35 27, Slurry Trench, Part 1.3, SD-01 Preconstruction Submittals). Please note the slurry wall implementation plan was originally presented as Section 8.2 of the approved Phase 3 Remedial Action Work Plan (September, 2019).

Please return concurrence of this submittal by May 8, 2020. If you have any questions, please feel free to contact me directly or Mike Ayala.
V/r,
Tim

TIM KEMPER, PE
Project Manager
APTIM | Government Strategic Business Unit
O 619 446 4536
M 617 515 3004 (USE THIS NUMBER UNTIL FURTHER NOTICE)
E tim.kemper@aptim.com

confirmation sample will be analyzed for the analyte(s) exceeding the Tier 2 action level in the original confirmation sample.

If confirmation sample results in a post-excavation floor sample exceed Tier 2 action levels, a step-down excavation will be performed which extends the excavation depth by 1 foot within 2.5 feet on all four sides of the sample that exceeded action levels. Unless an additional step-down excavation extends the original planned excavation depth to below 5 feet, additional sidewall samples are not required and only a replacement bottom sample will be collected. This process will be repeated until the confirmation sample results indicate that soil on the re-excavated floor no longer contains chemical concentrations exceeding the Tier 2 action levels, or the excavation has reached a maximum depth of 10 feet bgs or bedrock/Bay Mud is encountered, whichever is shallower, or upon the Navy's determination to limit excavation.

Once confirmation sample results indicate that contaminated soil (i.e., exceeding Tier 2 action levels) has been removed from the excavation area, the excavation will be backfilled. Excavations may be backfilled prior to receiving confirmation sample results when site conditions warrant (e.g., safety, weather, or tidal considerations). The SAP (Appendix A) outlines detailed post-excavation sampling procedures. If sample results do not meet Tier 2 action levels after one step-out, the RPM will be timely informed and further direction requested. The Navy, in consultation with the regulatory agencies, will use a weight of evidence approach to justify the determination to limit further excavation including the following decision criteria: concentration of residual material vs. Tier 2 action level, depth and extent of material below 10 feet, location of the Tier 2 exceedance and future exposure potential (e.g., beneath durable cover), and practicality of removing the residual material. If residual contamination is limited to TPH only, further excavation may be addressed under the TPH program.

8.1.2.3 Excavation Dewatering

Excavation dewatering is not anticipated to be necessary during this RA phase due to the shallow nature of the planned remedial excavations, their limited size, short open-excavation duration, and work will be performed during low tide conditions. If operation of a dewatering system becomes necessary to ensure that the static groundwater level is sufficiently drawn down to allow excavation to proceed safely or to ensure the proper placement of backfill material, the RPM will be notified and a dewatering procedure will be developed and implemented in accordance with a field change request. The Navy will advise the regulatory agencies of the field change.

8.2 Slurry Wall Construction

As specified in the ROD (Navy, 2013), groundwater at Parcel E will be controlled through the installation of two separate below-ground groundwater barrier walls; one in IR-02 Northwest and a second in IR-03. The IR-03 barrier wall, proposed to control groundwater discharge from the NAPL-impacted zone at IR-03, will be installed by another Navy contractor during a separate phase of construction (Phase 2). This Phase 3 RAWP addresses installation of the groundwater barrier wall to be installed adjacent to

IR-02 Northwest shoreline. This slurry wall will tie into the previously installed Parcel E-2 nearshore slurry wall and extend to the southeastern limits of IR-02 Northwest. The total length of the IR-02 Northwest slurry wall is approximately 1,090 feet, including a required 20-foot-long overlap with the Parcel E-2 nearshore slurry wall, as necessary to form a continuous low-permeability barrier between the two parcels. The tie-in process (Section 8.2.3.4) will be critical in achieving the overall performance objective.

8.2.1 IR-02 Northwest Slurry Wall

As designed, the IR-02 Northwest slurry wall will be located on the landward side of the shoreline revetment (Section 8.3) and will run parallel to the crest of the revetment following installation. Figure 8-1 shows the proposed alignment of the slurry wall. The slurry wall is intended to maximize the travel time of groundwater between areas up gradient of the barrier and the Bay, thus extending the natural attenuation period for contaminants in groundwater that might be discharged to the Bay. The slurry wall will be supplemented by an up gradient well network (to be installed by others) to support monitoring and, if necessary, groundwater extraction. To help ensure the IR-02 Northwest slurry wall will be essentially vertical, the trench excavation will be undertaken from a level-graded working platform at approximately +7.5 feet above msl (Figure 8-5) to a depth of approximately -20 feet msl, as necessary to ensure a minimum 2 feet key into the Bay Mud aquitard.

To construct the required working platform, pre-approved fill material will be placed atop the existing grade along the alignment of the slurry wall, with a temporary slope face along the Bay side of the slurry wall. The backfill material used to construct the working platform will consist of clean fill material meeting the backfill requirements provided in the SAP (Appendix A). The backfill will be composed of radiologically cleared on-site material available for reuse, or imported fill material that has been analyzed to confirm that the material does not contain site-specific COCs, ROCs, and other contaminants based on the nature of the fill source in accordance with the *Information Advisory, Clean Imported Fill Material* (DTSC, 2001). Construction of the working platform will comply with DBR Appendix C, Specifications Section 31 00 00, Earthwork (CES, 2018). The soil material will be placed in 8-inch loose lifts and will be compacted to at least 90 percent of the maximum modified Proctor dry density (ASTM D 1557) at a moisture content within 3 percentage points of optimum. To help ensure the short-term stability of the shoreline slopes, as well as to minimize the volume of the fill, the temporary slope face is proposed to be essentially vertical and retained by a temporary sheet pile wall, which will remain in place until the shoreline revetment is constructed.

8.2.2 Temporary Shoring Installation

The temporary shoring, in the form of cantilevered steel sheet piles, will be installed using a long-reach excavator fitted with a vibraplate compactor attachment, capable of grasping, placing, and installing pile sections. The sheet piles will be installed using vibratory methods or other non-impact driving methods to avoid generating high noise levels and impacts to special status aquatic species. The sheet piles will

be installed with the male lock leading in order to eliminate the female lock getting filled up with soil and hindering the pile driving. As the piles are Z-shaped, they will be paired before being driven. Each sheet will be lagged into the driving guide that will maintain the sheets plumb and aligned during driving.

Prior to installation, APTIM will mark with survey stakes the location of the temporary shoring, which will be offset from the centerline of the slurry wall by approximately 15 feet from the centerline of the slurry wall to allow for the completion of the concrete seawall footing (Figure 8-8) within the landward side of the temporary shoring.

After installation of the slurry wall and concurrent with construction of the IR-02 Northwest armored revetment, the temporary shoring will be removed using a long-reach excavator fitted with a vibraplate attachment, capable of grasping and removing the pile sections. The temporary sheet pile shoring will be removed in sections as the revetment is constructed to maintain a stable shoreline area and prevent sediment migration into the Bay.

8.2.3 Slurry Wall Materials

APTIM proposes to install the IR-02 Northwest slurry wall using the same cement-bentonite (CB) slurry mix and approach used for the nearshore slurry wall installed at Parcel E-2 in 2016. The slurry wall will be constructed using a self-hardening CB slurry, thus excluding a soil component for backfill as permitted by the DBR (CES, 2018). The approved Parcel E-2 slurry wall mix design, and the subsequent methods for installation and QC, also excluded the soil component in accordance with DBR Specification Section 02 35 27, paragraph 1.1.5.2 (CES, 2018). The CB slurry, consisting of a blend of slag cement, Portland cement, and bentonite, will be manufactured in an on-site batch plant. QC samples will be collected throughout the slurry wall installation and tested at a frequency no less than that established in CQCP Attachment 7 (Appendix D). To compete the IR-02 Northwest slurry wall at Parcel E, the slurry used to maintain stability of the trench during construction will be self-setting and will itself become the permanent barrier wall. Because the slurry is self-hardening, the additional step of replacing bentonite slurry used to hold open the trench with a soil-CB backfill is eliminated; simplifying the installation procedure. This is the same procedure used successfully for the installation of both the nearshore and upland slurry walls at Parcel E-2.

8.2.3.1 Compatibility Testing

For this project, APTIM plans to use the same CB slurry mixture tested and approved for the nearshore slurry wall at Parcel E-2. The slurry mix design compatibility testing was completed in accordance with DBR Specification 02 35 27 (CES, 2018) and previously submitted for approval in the *Upland Cement-Bentonite Wall Installation—Mix Design Report, Parcel E-2 Project, Hunters Point Naval Shipyard, San Francisco, California* (CB&I Federal Services LLC, 2015b).

For the Parcel E IR-02 Northwest slurry wall, only limited compatibility testing will be necessary to supplement the existing testing previously performed for the Parcel E-2 project. The Parcel E slurry wall subcontractor will conduct a limited slurry mix design testing program to confirm that the specified requirements of the CB slurry will be achieved with the specified mix. The testing will include long-term compatibility testing with site groundwater collected from an existing monitoring well in IR-02 Northwest. The long-term compatibility testing will be conducted for two months or until three pore volumes of permeant have passed through the samples, whichever comes first.

Water, bentonite, and cement will be mixed for the slurry CB wall in accordance with the requirements of the project specifications (CES, 2018). Bentonite slurry will be prepared in advance of the CB slurry mixing and stored in a temporary storage tank until it is needed. The following subsections describe the materials to be used for the CB slurry. Safety data sheets for each of the materials will be available at the APTIM office trailer in accordance with the APP (APTIM, 2018a). The approved mix design consists of 4.5 percent Western Clay bentonite, 12 percent slag cement, 0.5 percent Portland cement, and 0.1 percent soda ash by weight of water.

Water

Water will be drawn from a hydrant on the property. APTIM's slurry wall subcontractor will supply and set up the necessary piping to convey the water to the batch plant and/or temporary storage tank. During compatibility testing and approval for use in the Parcel E-2 slurry wall, the on-site hydrant water was tested for pH, hardness, and total dissolved solids. Approximately 500,000 gallons of water will be used during the course of the slurry wall installation.

Bentonite

The bentonite for use in the slurry will be premium-grade sodium montmorillonite. The bentonite will meet the requirements of American Petroleum Institute (API) Specification 13A Section 9 for sodium bentonite for drilling fluids (American Petroleum Institute, 2010). The compatibility of the bentonite with the site conditions will be verified through laboratory testing prior to construction, as required by the DBR (CES, 2018).

The bentonite will be delivered to the site in 3,000 to 4,000-pound super sacks. A manufacturer's certification and bill of lading for each truckload of bentonite delivered will be submitted for QC review. The primary bentonite supplier for this project will be determined based on the requirements of the compatibility and mix design testing.

Slag Cement

Slag will conform to ASTM C989 and will be Grade 100 or 120, ground granulated blast furnace slag. The slag will be delivered in bulk and temporarily stored at the site in a pneumatic tank and silo. APTIM's subcontractor will submit the manufacturer's certification and bill of lading for each truckload of slag cement delivered to the site for approval prior to use.

Portland Cement

Cement will be Type II/V Portland cement conforming to ASTM C150. The cement will be procured from a local building supply company. The cement will be packaged in 47- or 94-pound bags and will be temporarily stored on pallets. The slurry batch plant operator will add bags of cement to the slurry mix manually in accordance with the approved mix design.

8.2.3.2 Slurry Mixing Plant

The slurry mixing plant will include two operations: bentonite slurry preparation and CB slurry preparation. The bentonite operation will contain the necessary equipment for preparing the bentonite slurry, including high-shear mixers capable of producing a stable suspension of bentonite in water, hydration tanks, and circulating pumps. Hydrated bentonite slurry will be conveyed to the CB slurry mixing operation. This operation will consist of a series of high-speed/high-shear colloidal mixers with a static agitator, where slag and cement will be added to the bentonite slurry to produce the final CB slurry. Storage silos, pumps, valves, hoses, storage supply lines, and other equipment will be provided as required to support the CB slurry production. The prepared slurry will be pumped to the point of use via fusion-welded HDPE pipe, as necessary.

It is anticipated that the following equipment (or equivalent) will be included as part of the batch plant operation:

- Jet shear (Venturi style) mixer to produce bentonite slurry
- Temporary storage tank for water storage
- Temporary storage tanks to hold bentonite slurry
- High-shear mixers to produce CB slurry
- Pneumatic silo(s) for temporary slag cement storage
- Air compressor (185 standard cubic feet per minute)
- Generator (230 kilowatt) to power the batch plant
- Electric pumps to mix, circulate, and transfer slurry
- Progressive cavity pumps to pump CB slurry to the trenches
- All-terrain telescopic boom forklift to handle material (8,000-pound capacity)
- HDPE welder and generator (5 kilowatt) for assembling slurry and water pipe
- Tool box to contain spare parts and tools

Stationary equipment at the batch plant (i.e., pumps, mixers and silos) will be grounded by attaching copper grounding wire to grounding rods. If maintenance of electrically powered equipment is required, the proper procedures for lockout/tag-out will be followed in accordance with the APP (APTIM, 2018a).

The batch plant will be assembled near the slurry wall trench excavation area. The space needed for the plant will be approximately 150 feet by 150 feet. BMPs will be implemented around the mix plant area in accordance with the CERCLA Stormwater Management Plan (Appendix C, Section 5.0).

8.2.3.3 Cement-Bentonite Slurry Preparation

The CB slurry will be prepared in a custom-built, continuous-cycle automated batch plant capable of producing a nearly continuous supply of fully mixed slurry. Both the bentonite and CB slurries will be monitored as they are mixed (and stored) while on-site quality control samples, as stated in the Testing Plan and Log (Appendix D, Attachment 7), will be tested to ensure the properties observed are in accordance with the requirements of Specification 02 35 27 (CES, 2018) and the required parameters of the final mix design report.

Bentonite-Water Slurry

The bentonite slurry will be prepared by mixing water and bentonite using a jet-shear mixer. Super sack(s) of bentonite will be mounted over the material hopper and the bentonite powder will be drawn into the jet mixer via the Venturi effect as water is pumped through the mixing nozzle. The bentonite slurry will be ejected directly into a primary temporary storage tank, where it will be re-circulated until it is transferred to the CB mix tank.

Cement-Bentonite Slurry

The CB slurry will be prepared by blending the bentonite-water slurry with cement in a high-speed colloidal mixer. The bentonite slurry will be delivered into the mixing tank using a variable-speed pump. The slag will be added from a bulk silo via a screw-feed auger completely enclosed in the auger housing. The auger also will be on a variable-speed drive. A measured amount (one bag or less) of Portland cement is added by hand through the grate at the top of the mixer.

A small recirculation pump with a mass-density flow meter attached to the mixing tank will provide the operator with a direct read of the density of the CB mix. The operator of the batch plant will adjust the speed of the inputs to achieve the desired density, which is calculated from the selected mix ratio. As a check on the meter, periodic mud balance tests will be performed in accordance with American Petroleum Institute Recommended Practice 13B-1 (American Petroleum Institute, 2003).

The mixed CB will be pumped to the slurry wall trench using a positive-cavity pump through a 6-inch HDPE pipeline. This pump will be controlled with a variable-frequency drive to balance the rate of slurry production. Sensors will monitor the level of the liquid in the mixing tank and the operator will maintain the water level within the tank at maximum functional capacity.

8.2.3.4 Slurry Wall Trench Excavation and Installation

APTIM's slurry wall subcontractor will excavate the IR-02 Northwest slurry trench from the top of the previously installed working platform (Section 8.2.1) to an average depth of approximately 20 feet bgs;

sufficient to allow for keying of the nearshore slurry wall into the Bay Mud layer to a minimum depth of two feet. The trench will be excavated with a long-reach excavator capable of excavating effectively at the average depth of 20 feet, and will be capable of working productively up to a depth of 40 feet should site conditions change. The excavator will be fitted with a 24-inch wide bucket to ensure a minimum 24-inch wide continuous trench. The excavator bucket will be a heavy-duty bucket equipped with teeth and rippers, which will be used to penetrate through the existing subsurface and into the Bay Mud. If large debris is encountered above the water table, then reasonable efforts will be made to remove the obstruction with the excavator, up to and including benching down to excavate the large debris. In the event that the obstruction cannot practically be removed, an alternative alignment will be proposed for Navy approval so that the slurry wall installation will complete a continuous low-permeability barrier along the Parcel E shoreline as designed.

The IR-02 Northwest slurry wall trench excavation is planned to start at the northwestern Parcel E boundary and proceed in a southeasterly direction to complete the nearshore slurry wall (Figure 8-1). As discussed in Section 8.2, the tie-in process will be critical in achieving a continuous low-permeability barrier with the existing Parcel E-2 nearshore slurry wall. The proposed overlap of the two walls will address the potential for the ends of either wall to not terminate at a vertical profile. Slight deviations from a vertical profile may result in the slurry wall at the ground surface extending slightly further than the bottom of the slurry wall. For a slurry wall that extends to between 20 and 25 feet bgs (as is planned for the IR-02 Northwest slurry wall), the potential variation is expected to be less than 5 feet in horizontal distance. Therefore, the proposed Parcel E IR-02 Northwest slurry wall will overlap approximately 20 feet into the Parcel E-2 nearshore slurry wall to ensure that the slurry wall will form a continuous low-permeability barrier (Figure 8-5).

Spoils from the trench excavation and excess slurry from the trench removed during the excavation process will be staged temporarily alongside the trench (on plastic sheeting on the working surface on the upland side of the trench). Spoils will be placed in drying beds or direct loaded into dump trucks for transport to the MPPEH and/or radiological screening location. Spoils temporarily staged near the trench will be controlled to prevent erosion in compliance with the provisions of the CERCLA Stormwater Management Plan (Appendix C, Section 5.0) and will be transported for screening once dry enough to do so. The excavator bucket will be drained over the trench to minimize the generation of water with each successive cut.

Materials removed from the excavated slurry wall trench will be mechanically screened prior to conducting radiological soil screening. The mechanical screening process will segregate and remove trash and large debris (greater than 6 inches) from the excavated slurry wall trench soil. The slurry wall will be constructed using a self-hardening CB slurry, thus excluding a soil component from the wall as permitted by the DBR (CES, 2018). Stability of the excavated trench will be maintained at all times during excavation and placement of the CB slurry by maintaining the level of the slurry in the open trench to within at least two feet of the working surface. A rapid drop in slurry level during excavation would likely

result from encountering an unknown abandoned utility pipe, or other subsurface void. If slurry loss is determined to be excessive (i.e., 2 inches or more slurry loss per hour in the trench), then the open portion of the trench will be backfilled with previously excavated material and/or bentonite to plug the leak. The slurry levels will be recorded to determine if an overnight loss occurs. If significant overnight loss occurs (2 feet or more slurry loss over a 12-hour period), the leak will be plugged with additional bentonite until no significant loss occurs. Excavated materials from the slurry wall trench will be classified and managed, based on chemical analyses and/or radiological screening results, in accordance with Section 8.4 and Section 8.9.

The trench excavation will be maintained in an "open" condition and supported by CB slurry. The slurry wall trench will be excavated in a series of approximately 20-foot to 40-foot-long "cuts," and filled with CB slurry as it is excavated. Following the initial dry cut (2 to 3 feet deep), the slurry level will be maintained within 2 feet of the working surface. Each cut of the slurry wall will be excavated to full depth before the excavator advances to begin the next cut.

As discussed in Section 4.3, the initial depth of the slurry wall trench will be determined based on data collected from an exploratory boring investigation, to be completed prior to mobilization of the slurry wall subcontractor. This investigation will involve drilling a number of CPT exploratory borings (Figure 8-5) along the proposed slurry wall alignment with at least two separate confirmation soil borings used to collect grab soil samples to be sent to a geotechnical laboratory. Geotechnical grab samples will be run for sieve and hydrometer testing to verify the percent clay within the core sample. APTIM's subcontracted driller will perform exploratory borings, as required, to confirm subsurface conditions and verify the key-in elevations and depths into the Bay Mud. The actual boring locations will be established in the field by APTIM, and will be no greater than 50 feet apart along the slurry wall alignment. The final boring depths will be established in the field and extend at least three feet into the Bay Mud aquitard that averages approximately 16.5 feet below grade level. Should drillers encounter refusal, the current location will be grouted in place and a step out location will be selected to avoid the refusal obstruction.

The IR-02 Northwest slurry wall will key at least 2 feet into Bay Mud material that does not include continuous lenses of permeable material, such as sand. The depth of the slurry wall trench will be confirmed by visually identifying Bay Mud material in the field during trenching. Based upon the geologic data collected via the exploratory CPT borings, the trench will be excavated to the expected top depth of the Bay Mud layer, or until encountered. The top of the Bay Mud key will be scraped with adequate passes of the excavator bucket to ensure removal of loose material. Once the Bay Mud is encountered, a sample of the key material will be presented to the on-site QC representative (or field engineer) for verification of the Bay Mud material, with a maximum spacing of every 20 linear feet. Bay Mud is readily identifiable in the field through its color and plasticity, therefore verification by the field QC representative will be performed by visual inspection of the material, to confirm that the material is Bay Mud and that no lenses of sand or other permeable material are present.

Once Bay Mud is confirmed, the subsequent two feet (minimum) will be excavated and continuously observed by the QC representative and Slurry Wall Operator to confirm no lenses of sand or other permeable material are present in the excavated soil. If lenses of sand or other permeable material are observed, the material will be removed and the subsequent two feet (minimum) will be excavated and inspected as before.

The bottom of the trench will be cleared by passing the excavator bucket into the previously excavated cut and scraping the bottom of the trench. This clearing will be performed after each cut is completed to maintain continuity at the bottom of the trench. The section of trench excavated during each shift will be considered one panel. Daily panels will be installed in series, without gaps, to form a continuous barrier wall.

The depth of the trench will be measured at least every 10 lineal feet. Depth measurements will be made from the working platform to the bottom of the trench with a weighted steel or cloth tape. The weight will consist of a flat-bottomed anchor heavy enough to sink through the slurry. The work platform elevation will be surveyed to provide elevation points. The trench alignment and offset control points will be surveyed prior to construction activities at ten-foot intervals along the nearshore slurry wall alignment.

Once the top of the wall has hardened sufficiently, a temporary anti-desiccation cap will be placed on the top of the wall. The temporary cover material will be placed within two days after slurry placement is completed over each 100-foot reach. A one-foot-thick layer of uncompacted soil will be placed over the wall by scraping material from the adjacent work platform.

After the entire alignment of the slurry trench is installed, and the temporary cover is placed, the final trench cover will be installed. The final trench cover will be installed by excavating a 2-foot deep, 6-foot wide trench from the surface. A small amount of soil will be bermed on the outside of the excavation to allow backfill to be placed to the level of the working platform. The excavation will be filled with CB material to complete the slurry wall installation.

8.3 Shoreline Revetment Construction

Shoreline revetment will be constructed along the IR-02 shoreline in accordance with the DBR (CES, 2018). The primary function of the shoreline revetment is to protect the shoreline from erosion; however, the revetment will also retain potentially contaminated soil located behind the revetment, serving to protect human health and the environment. Construction of the shoreline protection measures includes excavation of shoreline material and installation of protective features. The Phase 3 revetment will be installed along approximately 3,730 feet of exposed IR-02 shoreline within Parcel E (Figure 8-1). Another contractor will install shoreline revetment along the IR-03 shoreline during Phase 2 RA.

SUBMITTAL TRANSMITTAL

ACTIVITY ID	DATE
	Apr 29, 2020

CONTRACT NO	CONTRACT TITLE	SUBMI NO
N62473-17-D-0006; N6247318F4761	Parcel E Remedial Action—Phase 3	007

SUBM ITEM DESCRIPTION: Slurry Wall Implementation Plan

SUBMITTAL PRIORITY?	○ HIGH	● NORMAL
PREPARED BY CQC MGR?	● YES	○ NO
SCHEDULE REFERENCED?	○ YES	● NO
CRITICAL PATH?	● YES	○ NO

SPEC SECTION	SPEC PARAGRAPH	SPEC PAGE NO
02 35 27 SLURRY TRENCH	1.3	N/A

CQC REMARKS:

APTIM is submitting the attached Slurry Wall Implementation Plan, in accordance with the submittal procedures, for Navy review and approval.

The slurry wall implementation plan was originally presented as Section 8.2 within the approved Remedial Action Work Plan (September, 2019).

Apr 29, 2020

CONTRACTOR/QUALITY CONTROL MANAGER — DATE

APPROVAL AND COMMENTS

COMMENTS FOR DETAILED REVIEWER:

DETAILED REVIEWER 1 COMMENTS:

No exceptions noted.

DETAILED REVIEWER 1 NAME/SIGNATURE	TITLE	RESPONSE DATE
	Project Engineer	Apr 29, 2020

DETAILED REVIEWER 2 COMMENTS:

DETAILED REVIEWER 2 NAME/SIGNATURE	TITLE	RESPONSE DATE

APPROVER'S COMMENTS:

SUBM STATUS

GOVERNMENT CONSTRUCTION MANAGER — DATE